

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/017276 A1

(51) International Patent Classification⁷: E04C 3/29,
3/14, E04B 1/76

EH10 5XB (GB). JAHROMI, Ali, Bahadori [IR/GB];
Flat No 3, Second Floor 2F3, 50 Balcarres Street, Edinburgh EH10 5JQ (GB).

(21) International Application Number:
PCT/GB2004/003534

(74) Agent: MURNANE, Graham; Murgitroyd & Company,
165-169 Scotland Street, Glasgow G5 8PL (GB).

(22) International Filing Date: 16 August 2004 (16.08.2004)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0319172.3 15 August 2003 (15.08.2003) GB

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

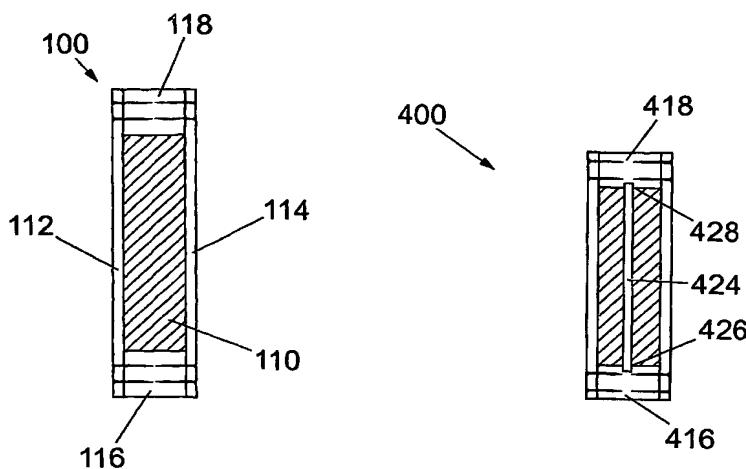
(71) Applicant (for all designated States except US): THE COURT OF NAPIER UNIVERSITY [GB/GB]; 10 Colinton Road, Edinburgh EH10 5DT (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): KERMANI, Abdol-ghaffar [GB/GB]; 4 Mid Steil, Glenlockhart, Edinburgh

[Continued on next page]

(54) Title: STRUCTURAL SUPPORT BEAMS



(57) Abstract: The invention relates to structural support beams for use in building and construction, which possess structural characteristics suitable for use as load-bearing flexural members. The support beam comprises a timber support frame formed from two spaced apart flanges (116, 118) connected by at least two outer support webs (112, 114). Optionally one or more further inner support webs (424) connect the flanges (416, 418) in an intermediate position between the outer support webs. Together, the flanges and support webs define at least one volume (110) which is filled with a plastics foam material to provide both improved structural and sound/thermal insulation properties. The use of regular rectangular flanges, which are fully interposed between outer support webs, provides a stronger and stiffer support beam both in bending and in shear. In fact, the absence of grooves (426, 428), recesses or cutout portions in the flanges provides further advantages such as greater dimensional stability, ease of construction and cheaper and simpler manufacturing. The support beams may be in the form of I-beams, double I-beams, box-beams, boxed I-beams or boxed double I-beams.

WO 2005/017276 A1



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*